

Project ID: 31025

Construct Fish Screen and Fish Passage Improvements at Lebanon Diversion Dam on South Santiam River

Sponsor: City of Albany, Oregon

Province: Lower Columbia

Subbasin: Willamette

FY03 Request: \$420,000

5YR Estimate: \$3,544,000

Short Description: Design and construct an intake fish screen to prevent fish from entering the unprotected Albany-Santiam Canal, and modify existing Lebanon Diversion Dam on South Santiam River to improve fish passage.

Response Needed? Yes

ISRP Preliminary Recommendation and Comments:

A response is needed. The project proposes to screen the intake of a water diversion canal and improve the 80-year-old fish passage facilities at the Lebanon Diversion Dam.

RESPONSE:

These responses are based on information provided by Gary Galovich (ODFW Fish Biologist) and City of Albany staff.

What data is available demonstrating fish use of the diversion canal and fish passage problems? How many smolts are currently being entrained in the diversion canal? Has smolt survival in the canal been measured?

The Santiam-Albany Canal has an open connection to the South Santiam River, just upstream from the Lebanon Diversion Dam. Significant numbers of fish can enter the canal, given: (1) the open connection between the South Santiam River and the canal, (2) the documented seasonal migration of both juvenile salmonids (for rearing) and adult salmonids (for spawning) from the South Santiam River into tributary streams, and (3) the large amount of water diverted into the canal from the river. In the winter, about 75 cfs is diverted from the South Santiam's 5,000 cfs flow, while about 105 cfs is diverted

from the South Santiam's 800 cfs flow in the summer. After Albany's hydroelectric facility is reactivated, about 265 cfs will be diverted into the canal in the winter.

The City of Albany has relied on the natural resource agencies (including NMFS, ODFW, and FERC) for reviews and comments about the need to screen the canal and modify the dam and fish passage structures. Fish have been regularly observed in the canal but little has been done to sample fish or to quantify their presence. However, native migratory or anadromous fish species have been observed in the canal, including chinook, steelhead, cutthroat trout, and Pacific lamprey. City of Albany staff, operating the Albany water treatment plant and hydroelectric facility, have observed adult chinook and steelhead on a daily basis during periods of adult migration for these species. In addition, local residents have fished the canal for decades, catching adult cutthroat trout and larger salmonids (over 20" long), which were likely chinook or steelhead.

Migratory or anadromous fish can stray into the entire length of the 18-mile man-made canal. These fish have several complete barriers in the Lebanon area that prevent their return to the South Santiam River. These barriers include an old hydroelectric penstock with a ~10-foot vertical drop in the canal channel at the City of Lebanon water treatment, located 3 miles downstream from the canal intake. There are also numerous diversions between the canal intake and the Albany water treatment plant, totaling about 55 cfs, that pose additional risks to fish in the canal. Water quality in much of the canal can support salmonids year-round, further adding to its attraction. However, habitat conditions are not favorable for salmonids because the canal is a man-made structure with little channel complexity. Important habitat features, such as large wood, are removed for maintenance purposes. Also, flows in the canal are regulated and are severely reduced when maintenance, such as dredging, is required.

Considering all of these features, survival would be poor for migratory or anadromous fish in the canal. NMFS stated in a letter to the City of Albany (dated July 16, 2001) that "we believe it is very likely that, in its current unscreened configuration, the City's diversion takes listed fish in the South Santiam River".

The sponsors need to provide more information on the fish runs that would benefit from the improvements. In particular, what is the status of the naturally spawning populations and their habitats in the section of river above the diversion dam? Will this project mostly benefit hatchery runs of summer steelhead and spring chinook?

Spring chinook salmon and winter steelhead are native to the South Santiam basin. With the exception of that portion of the basin above Green Peter Reservoir, the basin lies within the Upper Willamette ESU for both spring chinook and winter steelhead. The primary intent of this project is to improve passage and survival of native winter steelhead and naturally produced spring chinook salmon. The project will also benefit hatchery runs of summer steelhead and spring chinook salmon. Improvements to the ladders at the Lebanon Diversion Dam will also allow the site to be used for monitoring the size and composition of runs of winter steelhead, spring chinook, and summer

steelhead. Many other native fish species would benefit, particularly from the screening of the canal, including cutthroat trout, rainbow trout, and Pacific lamprey.

Spring Chinook: The wild component of the spring chinook in the South Santiam is believed to have been extirpated due to: (1) habitat lost when the Corps facilities were constructed, (2) degradation of habitats throughout the basin, and (3) past Corps management of flows in the mainstem of the South Santiam below Foster Reservoir. Current production of spring chinook above the Lebanon Diversion Dam is the result of both hatchery releases and also natural production of hatchery fish. Hatchery spring chinook in the South Santiam were derived from localized Willamette stock. Although the “wild” component of the South Santiam spring chinook is believed to have been extirpated, it is recognized that recovery of spring chinook in the basin will rely on the natural production of South Santiam hatchery stock. Below the Lebanon Diversion Dam, spring chinook spawn naturally in the tributaries of Thomas Creek and Crabtree Creek. Above the Lebanon Diversion Dam, spring chinook spawn naturally in the mainstem of the South Santiam River (up to and above Foster Reservoir) and the lower reaches of Wiley Creek. Flows in the mainstem above the Lebanon Diversion Dam are regulated by the Corps but the habitat remains relatively intact. Above Foster Reservoir, much of the land is under federal management, primarily USFS, and habitat remains intact. Run sizes can vary, but generally range up to about 8,000 fish with most of these passing above the Lebanon Diversion Dam.

Winter Steelhead: All returning winter steelhead are the result of natural production - there is no hatchery program for winter steelhead in the South Santiam basin. Below the Lebanon Diversion Dam, winter steelhead spawn in the tributaries of Thomas Creek and Crabtree Creek. Above the Lebanon Diversion Dam, winter steelhead spawn in the mainstem of the South Santiam River (up to and above Foster Reservoir) and in the tributary streams of Hamilton Creek, McDowell Creek, Wiley Creek, Moose Creek, Canyon Creek, and Soda Fork. Flows in the mainstem above the Lebanon Diversion Dam are regulated but the habitat for steelhead remains relatively intact. The tributaries of Hamilton Creek, McDowell Creek, and Wiley Creek have been impacted by a variety of land use practices including agriculture, but are primarily affected by commercial forest management. Although these stream habitats have been degraded, they remain productive. In the mainstem above Foster Reservoir and in the tributaries of Moose Creek, Canyon Creek, and Soda Fork, much of the land is under federal management, primarily USFS, and habitat remains intact. Run sizes can vary but have been as high as over 4,000 fish with the majority passing above the Lebanon Diversion Dam. Typical returns to the basin above Foster Dam range from 200 to 800 adults.

Summer Steelhead: Summer steelhead are also present in the South Santiam but are not native and are solely the product of hatchery production to provide for a sport fishery.

Does the current fish ladder meet NMFS standards?

No, the current fish ladders do not meet NMFS standards. In a letter to the City of Albany (dated July 16, 2001), NMFS indicated that it is “anxious to see the fish protection facilities, specified in the City of Albany’s (City) FERC license for the project (FERC No. 11509), installed and operating at the City’s Lebanon diversion dam as soon as possible.” NMFS specified that to protect both juvenile and adult listed fish, installation of a fish screen and construction of a new fish ladder would be necessary.